

SECRET

$$\begin{array}{c}
 \text{R} - \text{Y} - \text{O} \\
 \quad \quad \quad \diagup \\
 \quad \quad \quad \text{P} - \text{N} - \text{C}(=\text{O}) - \text{R}^2 \\
 \quad \quad \quad \diagdown \quad \quad \diagup \\
 \text{R}^1 - \text{S} \quad \quad \quad \text{R}^3
 \end{array}$$

feeding a powder comprising at least about 95% by weight of said insecticidally active compound to an extruder,

extruding an extrusion product while controlling the temperature within the extruder and the rate and quantity of water fed to the extruder to minimize tackiness and clumping together of said extrusion product, and

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2. The process for producing low moisture content pellets according to claim 1, wherein the extruder is an axial extruder.

3. The process for producing low moisture content pellets according to claim 1, wherein the temperature within the extruder is controlled such that a higher temperature requires a lower rate of water feed, and a lower temperature requires a greater rate of water feed.

4. The process for producing low moisture content pellets according to claim 1, wherein the temperature within the extruder is in the range of from about 145° F to about 160° F.

5. The process for producing low moisture content pellets according to claim 1, wherein after extrusion start-up, water is continuously fed to the extruder at a rate of about 0.5% by weight based on the weight of the powder/water mixture formed.

6. The process for producing low moisture content pellets according to claim 1, wherein the powder comprises from about 0.5% to about 3.0% by weight of a processing aid other than water.

7. The process for producing low moisture content pellets according to claim 6, wherein the processing aid is a vinylpyrrolidone-vinyl acetate copolymer.

8. The process for producing low moisture content pellets according to claim 6, further comprising blending the insecticidal compound and the processing aid to form

an extrudable powder prior to feeding the powder to the extruder.

9. The process for producing low moisture content pellets according to claim 1, further comprising cooling said extrusion product as it exits an orifice of the extruder.

10. The process for producing low moisture content pellets according to claim 1, wherein said forming step comprises drying said extrusion product to remove excess water, thus forming hardened pellets having a moisture content of about 0.5% by weight or less.

11. The process for producing low moisture content pellets according to claim 1, wherein said forming step comprises obtaining hardened extrusion product and pellets having a moisture content of about 0.5% by weight or less, and reducing the length of at least a portion of said hardened extrusion product to form pellets.

12. The process for producing low moisture content pellets according to claim 1, wherein said powder consists essentially of acephate technical grade containing at least about 97% acephate.

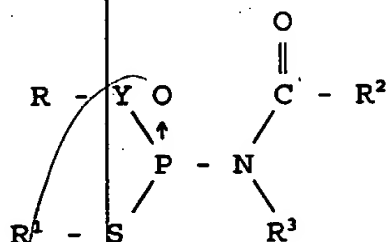
13. The process for producing low moisture content pellets according to claim 1, wherein R and R¹ are independently methyl, ethyl, alkyl or alkenyl; R² is hydrogen or alkyl; R³ is hydrogen, and Y is oxygen.

14. The process for producing low moisture content pellets according to claim 13, wherein R, R¹ and R² are methyl.

15. The process for producing low moisture content pellets according to claim 1, wherein the process is carried out in the absence of organic solvents.

16. The process for producing low moisture content pellets according to claim 1, wherein the powder consists essentially of acephate technical grade containing at least about 97% acephate, the process is carried out in the absence of organic solvents, and the resulting pellets are cylindrically shaped and consist essentially of acephate and up to about 0.5% by weight water.

17. Chemically stable, low moisture content pellets comprising an insecticidally active compound and up to about 0.5% by weight water, said compound being of the formula:



wherein R and R¹ individually are an alkyl, alkenyl or alkynyl group containing up to 6 carbon atoms, R² is hydrogen, an alkyl group containing 1 to 18 carbon atoms, a cycloalkyl group containing 3 to 8 carbon atoms, an alkenyl group containing 2 to 18 carbon atoms or an alkynyl group containing 3 to 18 carbon atoms, R³ is hydrogen or an alkyl group containing 1 to 6 carbon atoms, and Y is oxygen or sulfur,

said pellets having been made by a process comprising the steps of

feeding a powder comprising at least about 95% by weight of said insecticidally active compound to an extruder,

feeding water to the extruder during at least a portion of feeding of said powder, the water contacting the powder to form a mixture,

extruding an extrusion product while controlling the temperature within the extruder and the rate and quantity of water fed to the extruder to minimize tackiness and clumping together of said extrusion product, and

forming pellets having a moisture content of about 0.5% or less by weight from said extrusion product.

18. The chemically stable, low moisture content pellets according to claim 17, wherein the extruder is an axial extruder.

19. The chemically stable, low moisture content pellets according to claim 17, wherein the temperature within the extruder is controlled such that a higher temperature requires a lower rate of water feed, and a lower temperature requires a greater rate of water feed.

20. The chemically stable, low moisture content pellets according to claim 17, wherein the temperature within the extruder is in the range of from about 145° F to about 160° F.

21. The chemically stable, low moisture content pellets according to claim 17, wherein after extrusion start-up, water is continuously fed to the extruder at a rate of about 0.5% by weight based on the weight of the powder/water mixture formed.

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22. The chemically stable, low moisture content pellets according to claim 17, wherein the powder comprises from about 0.5 to about 3.0% by weight of a processing aid other than water.

23. The chemically stable, low moisture content pellets according to claim 22, wherein the processing aid is a vinylpyrrolidone-vinyl acetate copolymer.

24. The chemically stable, low moisture content pellets according to claim 22, further comprising blending the insecticidal compound and the processing aid to form an extrudable powder prior to feeding the powder to the extruder.

25. The chemically stable, low moisture content pellets according to claim 17, further comprising cooling said extrusion product as it exits an orifice of the extruder.

26. The chemically stable, low moisture content pellets according to claim 17, wherein said forming step comprises drying said extrusion product to remove excess water, thus forming hardened pellets having a moisture content about 0.5% by weight or less.

27. The chemically stable, low moisture content pellets according to claim 17, wherein said forming step comprises obtaining hardened extrusion product and pellets having a moisture content of about 0.5% by weight or less, and reducing the length of at least a portion of said hardened extrusion product to form pellets.

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28. The chemically stable, low moisture content pellets according to claim 17, wherein said powder consists essentially of acephate technical grade containing at least about 97% acephate.

29. The chemically stable, low moisture content pellets according to claim 17, wherein R and R¹ are independently methyl, ethyl, alkyl or alkenyl; R² is hydrogen or alkyl; R³ is hydrogen, and Y is oxygen.

30. The chemically stable, low moisture content pellets according to claim 29, wherein R, R¹ and R² are methyl.

31. The chemically stable, low moisture content pellets according to claim 17, wherein the process is carried out in the absence of organic solvents.

32. The chemically stable, low moisture content pellets according to claim 17, wherein the powder consists essentially of acephate technical grade containing at least about 97% acephate, the process is carried out in the absence of organic solvents, and the resulting pellets are cylindrically shaped and consist essentially of acephate and up to about 0.5% by weight water.

33. Chemically stable insecticidal pellets consisting essentially of an insectically active compound and water in an amount up to about 0.5% by weight, said compound being of the formula:

[illegible]

34. The chemically stable, low moisture content pellets according to claim 33, wherein R and R¹ are independently methyl, ethyl, alkyl or alkenyl; R² is hydrogen or alkyl; R³ is hydrogen, and Y is oxygen.

35. The chemically stable, low moisture content pellets according to claim 34, wherein R, R¹ and R² are methyl.

36. The chemically stable, low moisture content pellets according to claim 35, wherein said compound is present in an amount of about 97 to 99.5% by weight.

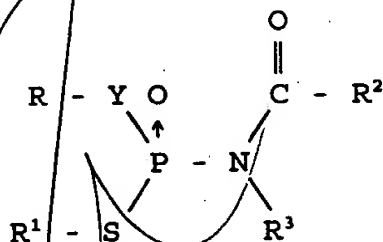
37. The chemically stable, low moisture content pellets according to claim 33, wherein said moisture content is less than about 0.3% by weight.

38. The chemically stable, low moisture content pellets according to claim 37, wherein said compound is acephate.

39. The chemically stable, low moisture content pellets according to claim 33, wherein said pellet further comprises up to about 3% by weight of a processing aid.

40. The chemically stable, low moisture content pellets according to claim 39, wherein said processing aid is a vinylpyrrolidone-vinyl acetate copolymer, said compound is acephate, and said moisture content is less than about 0.3% by weight.

41. A process for producing low moisture content pellets comprising an insecticidally active compound of the formula:



wherein R and R¹ individually are an alkyl, alkenyl or alkynyl group containing up to 6 carbon atoms, R² is hydrogen, an alkyl group containing 1 to 18 carbon atoms, a cycloalkyl group containing 3 to 8 carbon atoms, an alkenyl group containing 2 to 18 carbon atoms or an alkynyl group containing 3 to 18 carbon atoms, R³ is hydrogen or an alkyl group containing 1 to 6 carbon atoms, and Y is oxygen or sulfur, comprising the steps of

providing a powder comprising at least about 95% by weight of the insecticidally active compound,

contacting the powder with water to form a damp or wet mixture, and thereafter

extruding an extrusion product of predetermined diameter from the damp or wet mixture,

forming pellets from the extrusion product, and

drying the pellets to a moisture content of less than about 0.5% by weight.

42. The process for producing low moisture content pellets according to claim 41, wherein the powder is contacted with water in an amount of from about 2 to 7% by weight.

43. The process for producing low moisture content pellets according to claim 42, wherein the powder is contacted with water in an amount of from about 2.0 to 3.5% by weight.

44. The process for producing low moisture content pellets according to claim 41, wherein the pellets are dried to a final moisture content of less than about 0.3% by weight.

45. The process for producing low moisture content pellets according to claim 44, wherein the pellets are dried to a final moisture content of less than about 0.2% by weight.

46. The process for producing low moisture content pellets according to claim 41, wherein the extruding step is carried out using a low pressure basket extruder.

47. The process for producing low moisture content pellets according to claim 41, wherein the powder comprises from about 0.5% to about 3.0% by weight of a processing aid other than water.

48. The process for producing low moisture content pellets according to claim 47, wherein the processing aid is a vinylpyrrolidone-vinyl acetate copolymer.

49. The process for producing low moisture content pellets according to claim 47, further comprising blending the insecticidal compound and the processing aid to form the powder.

50. The process for producing low moisture content pellets according to claim 41, wherein said powder consists essentially of acephate technical grade containing at least about 97% acephate.

51. The process for producing low moisture content pellets according to claim 1, wherein R and R¹ are independently methyl, ethyl, alkyl or alkenyl; R² is hydrogen or alkyl; R³ is hydrogen, and Y is oxygen.

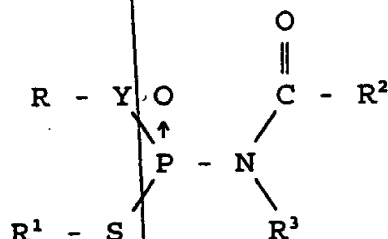
52. The process for producing low moisture content pellets according to claim 51, wherein R, R¹ and R² are methyl.

53. The process for producing low moisture content pellets according to claim 41, wherein the process is carried out in the absence of organic solvents.

54. The process for producing low moisture content pellets according to claim 41, wherein the powder

consists essentially of acephate technical grade containing at least about 97% acephate, the process is carried out in the absence of organic solvents, and the resulting pellets are cylindrically shaped and consist essentially of acephate and less about 0.3% by weight water.

55. Chemically stable, low moisture content pellets comprising an insecticidally active compound and up to about 0.5% by weight water, said compound being of the formula:



wherein R and R¹ individually are an alkyl, alkenyl or alkynyl group containing up to 6 carbon atoms, R² is hydrogen, an alkyl group containing 1 to 18 carbon atoms, a cycloalkyl group containing 3 to 8 carbon atoms, an alkenyl group containing 2 to 18 carbon atoms or an alkynyl group containing 3 to 18 carbon atoms, R³ is hydrogen or an alkyl group containing 1 to 6 carbon atoms, and Y is oxygen or sulfur,

said pellets having been made by a process comprising the steps of

providing a powder comprising at least about 95% by weight of the insecticidally active compound,

contacting the powder with water to form a damp or wet mixture, and thereafter

extruding an extrusion product [of predetermined diameter] from the damp or wet mixture,

forming pellets from the extrusion product, and drying the pellets to a moisture content of less than about 0.5% by weight.

56. The chemically stable, low moisture content pellets according to claim 55, wherein the powder is contacted with water in an amount of from about 2 to 7% by weight.

57. The chemically stable, low moisture content pellets according to claim 56, wherein the powder is contacted with water in an amount of from about 2.0 to 3.5% by weight.

58. The chemically stable, low moisture content pellets according to claim 55, wherein the pellets are dried to a final moisture content of less than about 0.3% by weight.

59. The chemically stable, low moisture content pellets according to claim 58, wherein the pellets are dried to a final moisture content of less than about 0.2% by weight.

60. The chemically stable, low moisture content pellets according to claim 55, wherein the extruding step is carried out using a low pressure basket extruder.

61. The chemically stable, low moisture content pellets according to claim 55, wherein the powder comprises from about 0.5% to about 3.0% by weight of a processing aid other than water.

62. The chemically stable, low moisture content pellets according to claim 61, wherein the processing aid is a vinylpyrrolidone-vinyl acetate copolymer.

63. The chemically stable, low moisture content pellets according to claim 61, further comprising blending the insecticidal compound and the processing aid to form the powder.

63. The chemically stable, low moisture content pellets according to claim 55, wherein said powder consists essentially of acephate technical grade containing at least about 97% acephate.

64. The chemically stable, low moisture content pellets according to claim 55, wherein R and R¹ are independently methyl, ethyl, alkyl or alkenyl; R² is hydrogen or alkyl; R³ is hydrogen, and Y is oxygen.

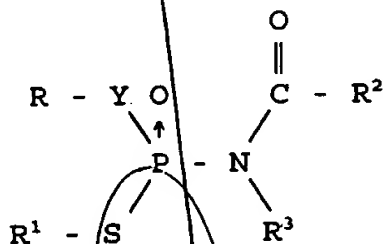
65. The chemically stable, low moisture content pellets according to claim 64, wherein R, R¹ and R² are methyl.

66. The chemically stable, low moisture content pellets according to claim 55, wherein the process is carried out in the absence of organic solvents.

67. The chemically stable, low moisture content pellets according to claim 55, wherein the powder consists essentially of acephate technical grade containing at least about 97% acephate, the process is carried out in the absence of organic solvents, and the resulting pellets are cylindrically shaped and consist

essentially of acephate and less about 0.3% by weight water.

68. Chemically stable insecticidal pellets comprising an insectically active compound, a processing aid in an amount up to about 3% and water in an amount up to about 0.3% by weight, said compound being of the formula:



wherein R and R¹ individually are an alkyl, alkenyl or alkynyl group containing up to 6 carbon atoms, R² is hydrogen, an alkyl group containing 1 to 18 carbon atoms, a cycloalkyl group containing 3 to 8 carbon atoms, an alkenyl group containing 2 to 18 carbon atoms or an alkynyl group containing 3 to 18 carbon atoms, R³ is hydrogen or an alkyl group containing 1 to 6 carbon atoms, and Y is oxygen or sulfur;

said pellets having a bulk density of about 26-31 lbs/cu.ft.

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